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ABSTRACT

The nature of direct and indirect effects of local management of schools (school-based management) on learning outcomes for students has remained elusive. The findings from a 5-year longitudinal study of the "Schools of the Future" reform in Victoria, Australia, are reported in this paper. The Victoria system is the largest public school system anywhere to have decentralized as much as 90 percent of its budget to the local level. An examination of the last two of six statewide surveys of principals using structural equation modelling revealed a relatively stable model that demonstrates these effects. Specifically, principals who report curriculum and learning benefits tend to be those who reported benefits in other domains, including the capacity to select staff, increased flexibility in the use of resources, and the involvement of community. Although the analysis relies on perceptions rather than student achievement data, the emergence of a stable model that explains direct and indirect effects of elements of Schools of the Future on outcomes in curriculum and learning is considered to be a valuable finding and should lay the groundwork for comprehensive case study research. (RJM)

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LOCAL MANAGEMENT OF SCHOOLS AND IMPROVED OUTCOMES FOR STUDENTS

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ABSTRACT

The nature of direct and indirect effects of local management of schools or school-based management on learning outcomes for students has remained elusive. This paper reports the findings from a five-year longitudinal study of the Schools of the Future reform in Victoria, Australia which, with 1,700 schools involved, is the largest public system anywhere to have decentralized as much as 90% of its budget to the local level. Analysis of findings of the last two of six state-wide surveys of principals using structural equation modelling has revealed a relatively stable model that demonstrates these effects. Such analysis has rarely been used in studies of this phenomenon. The model is consistent with theoretical and intuitive expectations for school-based management.

Local management of schools, or school-based management as it is known in some places, exists when significant responsibility, authority and accountability is decentralized to the school level within a centrally-determined framework of goals, policies, priorities, standards and accountabilities. While the manner in which the practice is manifested varies from setting to setting, especially in the United States of America, it is part of a more comprehensive program of reform in public education in Australia, especially in Victoria, where the research reported in this paper was conducted, as well as in Britain and New Zealand.

Theoretical and intuitive expectations suggest that in such manifestations, the practice ought to have a direct and positive impact on learning outcomes for students. The logic goes something like this. Each school is a community of students with a unique mix of learning needs that calls for a range of strategies if optimum outcomes are to be secured. Rather than centralized decisions on the detail of curriculum, approaches to teaching and the allocation of resources, schools should have the opportunity to set priorities among needs, select strategies to address these priorities, tailor curriculum, allocate resources to ensure these strategies can be implemented, select staff in like manner, conduct professional development programs and in other ways help teachers acquire the knowledge and skill to deliver the preferred programs, monitor progress toward the achievement of targets, provide incentives and reward success and, if all of these and other actions cohere and are implemented in the manner intended, there should be improvements for students and an overall contribution to school effectiveness.

That is the logic that underpins expectations. However, the number of meta-analyses of research on school-based management continues to grow and, for the most part, they continue to reveal little or no impact on student learning. Such reports quite properly lead to questions about the design and implementation of policy on school-based management, and are frequently cited as reasons why the practice ought not be adopted or ought to abandoned.

The purpose of this paper is to provide a brief review of recent meta-analyses on school-based management; to report research on a comprehensive and coherent program of school reform that includes a relatively high level of local management or school-based management, giving particular

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attention to structural equation modelling that has only now started to appear in studies of this kind; and to describe a model that is relatively stable and consistent with theoretical and intuitive expectations.

Review of literature

Research is selected from three places to illustrate the current literature on the topic. Much of the research from the United States consists of studies of school-based management and the findings appear discouraging in terms of effects on learning. The British research deals with a more comprehensive program of reform, not just school-based management or local management as it is known in the country. While effects are discernible, there is little to illuminate the links between elements in the reform and outcomes for students. The research from Hong Kong is, in several respects, the most interesting because of rich conceptualization and sophisticated analysis.

United States

Research from the United States of greatest interest is on school-based management (SBM) or school-site management. There is now more than twenty years of experience with school-based management and the literature in the late 1990s contains several meta-analyses or syntheses of different investigations over the years. One of the best is by Summers and Johnson (1996) who confirm the generally-held view that school-based management has so many different meanings and has been practised in so many different ways that it is difficult to generalize from experience, the only common element and 'cornerstone' being the delegation of authority to the school defined on three dimensions: 'the areas of decision making to which the increased authority applies, the constraints limiting exercise of that authority, and the collection of individuals who receive the new authority' (Summers and Johnson 1996, p. 77).

Summers and Johnson located 70 studies that purported to be evaluations of school-based management, but only 20 of these employed a systematic approach and just 7 included a measure of student outcomes. They conclude, with justification, that 'there is little evidence to support the notion that SBM is effective in increasing student performance. There are very few quantitative studies, the studies are not statistically rigorous, and the evidence of positive results is either weak or non-existent' (p. 80). Apart from the 'overwhelming obstacles' in the way of assessing the impact of SBM, Summers and Johnson draw attention to that fact that few initiatives 'identify student achievement as a major objective. The focus is on organizational processes, with virtually no attention to how process changes may affect student performance' (Summers and Johnson 1996, pp. 92 - 93).

For Eric Hanushek, the findings are not surprising because of the absence of a purposeful link between SBM and student performance. He notes the review of Summers and Johnson and observes that 'Decentralization of decisionmaking has little general appeal without such linkage and, indeed, could yield worse results with decentralized management pursuing its own objectives not necessarily related closely to student performance' (Hanushek 1996, p. 45). In establishing principles of reform that might provide incentives to reward performance, he concludes that 'Some form of site-based management is likely to be an important ingredient in new incentive systems' (p. 45).

It is interesting that Marshall Smith, Under Secretary, US Department of Education, in commenting on the reform agenda of the Clinton Administration (Smith, Scoll and Link 1996), draws attention to the importance of linkage by referring to the findings of an OECD study that parallels those of Summers and Johnson (OECD 1994).

> The OECD report goes on to suggest, however, that to the degree that a reorganization effort is conducted with a clarity of purpose to improve classroom teaching and learning, positive outcomes may accrue. In other words, to improve student learning, the content and instruction delivered to students must change as well as the organizational structure of the school. They complement each other.

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This is not rocket science.

(Smith, Scoll and Link 1996, p. 21)

Research on charter schools in the USA will be worth watching as experience in this approach to reform gathers momentum. Charter schools, in their most powerful manifestation, are free of school district control, receive funds from the public purse but may charge no tuition fees, and may be established by individuals, organizations and even universities. In early 1997, it was too soon to draw conclusions. Bierlein and Bateman make the following assessment of progress to date:

> In theory, charter schools attempt to break down the ingrained status quo elements of the system, and in reality, a great deal has been accomplished. Nearly 250 charter schools are already in operation. Many students who had not been successful in the traditional public school setting are now succeeding. Unique community and business partnerships are being formed, with many traditional 'outsiders' becoming intimately involved in the public education arena. Most importantly, ripple effects across the broader system are becoming visible as districts respond to pressures created by charter schools. (Bierlein and Bateman 1996, p. 167).

However, Bierlein and Bateman identify forces that are working against the charter movement, and they conclude that 'Unless well-coordinated efforts are undertaken to battle the many opposing forces, we predict that the charter school concept will simply not be strong enough medicine to become a broad-based reform initiative' (Bierlein and Bateman 1996, pp. 167 - 168).

Britain

There is a growing research base on the impact of the local management of schools in Britain, where up to eight years' experience has been gained. Levacic (1995, p. 190 found that, of four criteria associated with intentions for the local management of schools (effectiveness, efficiency, equity and choice), 'cost-efficiency is the one for which there is most evidence that local management has achieved the aims set for it by government', especially through the opportunity it provides for schools to purchase at a lower cost for a given quality or quantity than in the past, and by allowing resource mixes that were not possible or readily attainable under previous more centralized arrangements. She found evidence for effectiveness to be more tenuous, although the presumed link is through efficiency, making resources available to meet needs not able to be addressed previously.

In Britain, as elsewhere, there has been no research to determine the cause-and-effect relationship between local management and discretionary use of resources and improved learning outcomes for students, although there is opinion to the effect that gains have been made. Bullock and Thomas (1994, pp. 134 - 135) reported that an increasing number of principals believe there are benefits from local management [LM] for student learning. In responding to the statement that 'Children's learning is benefiting from LM', the number of agreements among primary principals increased from 30% in 1992 to 44% in 1992 to 47% in 1993. A similar pattern was evident among principals of secondary schools, increasing from 34% in 1991 to 46% in 1992 to 50% in 1993. Among both primary and secondary principals, those in larger schools were more positive than those in smaller schools. For example, in 1993, among primary principals, 41% of those in smaller schools agreed compared with 50% in larger schools; among secondary principals; 30% of those in smaller schools agreed compared to 80% of those in larger schools.

In general, the critiques of research on school-based management in the United States can be applied just as powerfully to research in Britain, even though reform in the latter has the coherence advocated by Summers and Johnson; Hanushek; and Smith, Scoll and Link in their commentaries on the North American literature. No meta-analyses or syntheses of research on the British experience have been attempted at the time of writing.

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Hong Kong

Research on school-based management in Hong Kong, led by Y. C. Cheng and W. M. Cheung, is arguably at the forefront internationally, not only conceptually and methodologically, but also in the manner in which it is beginning to illuminate the links between the practice of school-based management or self-management and outcomes for students. The conceptual framework set out in an award-winning paper (Cheng and Cheung 1996) and in a book by Cheng (1996) asserts that there are three levels of self-management or school-based management that are important, namely, school, group and teacher. If one seeks an impact on learning, it is not sufficient simply to decentralize authority and responsibility to the school; it must penetrate the classroom. Confirmation of the model was secured through research by Cheung, reports of which are now making their appearance at international conferences such as the International Congress of School Effectiveness and Improvement (Cheung and Cheng 1997). He used student achievement data in determining impact.

The schools in which Cheung conducted his research were participating in the School Management Initiative (SMI) established by the Education Department of Hong Kong in the early 1990s following a review of management in Hong Kong Schools. The SMI called for schools to volunteer their participation in an approach involving higher levels of local participation in decision-making, more resource flexibility, a deeper planning capacity and more accountability. By 1997, almost all government schools and a small fraction of schools in the aided sector had joined (in Hong Kong, only about 8% of schools are government schools, with most of the others being aided schools that are privately or corporately owned but receiving grants from government to meet a major part of their recurrent costs).

It is interesting that the Education Commission in Hong Kong, established in 1984 to make recommendation on education policy, has called for full implementation of the SMI approach in all schools by 2000, referring to it more generically as school-based management but, significantly, proposed that it be integrated with a range of practices in pursuit of quality schooling for all. The linkages that emerge as so important in the review of research on school-based management are intended for Hong Kong. The Education Commission observed that:

> With the implementation of the School Management Initiative in 1991, the Education Department has introduced certain arrangements which provide School Management Initiative schools with a more accountable framework for school-based management with teacher, parent and student participation. After several years of implementation, the experience from School Management Initiative schools suggests that such management is helpful in achieving school goals and in formulating long-term plans to meet student needs. The Commission therefore recommends that all schools should by the year 2000 practise school-based management in the spirit of School Management Initiative so that they can develop quality education according to the needs of their students. (Education Commission 1996, xi)

In general, it is apparent that many approaches to school-based management have been adopted for reasons that may be worthwhile, but in their practice do not involve strategies that call for different approaches to learning and teaching. Where they have, it appears that few research studies have employed approaches to analysis that are likely to reveal the linkages between school-based management, that ought be viewed as just an enabling mechanism, a range of practices that penetrate the classroom, and learning outcomes. The Cheung and Cheng studies are a notable exception. Research over five years in Victoria, Australia may also serve to illuminate the issue, and that is the subject of the rest of the paper.

Schools of the Future

As in the USA, school education in the public sector in Australia is the constitutional responsibility of the states, although the national (commonwealth or federal) government plays an important role

since it provides grants to the states from revenue derived from taxation. About 70% of students attend government or public schools, while 30% attend non-government or private schools, with the majority of the latter in systems of Catholic education. Unlike the USA, there are no districts in Australia, so the nation's public school system consists of eight state or territory systems of education. Public education in Australia has traditionally been highly centralized, with little discretion for school-based decision-making. There has, however, been a steady shift to school-based management in recent decades.

On assuming office in late 1992, the Kennett Liberal National Coalition Government moved swiftly to restore the financial condition of the state, which was more than $US24 billion in debt. It had evidence from the Commonwealth Grants Commission over many years and its own Commission of Audit to show that Victoria was spending more than its counterparts in the delivery of public education, especially in the light of the more geographically compact nature of the state, with no discernible advantage in terms of outcomes for students. The physical condition of many schools was very poor, and some schools had enrolments too small to sustain a program suited to the needs of society in the late twentieth century, especially in communities where other schools were available. Incentives were provided for teachers to retire, reducing the number by more than 6,500 to about 34,000, and 300 schools were closed or amalgamated, reducing the number to about 1,700.

While these measures were taken to manage a crisis in the State's finances, a package of reforms to restructure the system was designed in late 1992 and early 1993, and released under the banner of Schools of the Future. In broad terms, this package has four dimensions as illustrated in Figure 1. A Curriculum and Standards Framework was established for all years from Preparatory to Year 12, designed by the recently-established Board of Studies. About 90% of the state's school education budget was decentralized so that each school had a 'school global budget' to manage for virtually all areas of recurrent expenditure, including teaching and non-teaching staff, the only exceptions of note being capital expenditure and certain categories of expense for system and school support. Regional and central offices were severely down-sized, with the number of employees at these levels being reduced from more than 2,300 to less than 600. Local selection of teachers was introduced, though permanent teachers continued to be employed by the Education Department. The capacity to select teachers at the school level and to develop a school workforce plan was curtailed in the early years by the fact that the total number of teachers in the system was still considered in excess of requirements, so many schools carried a number of 'over entitlement' teachers. A Professional Recognition Program was introduced to provide a new career structure for teachers. A performance management framework was established for principal class personnel. The accountability system provided for annual reports to the Education Department and school community and a process of triennial review was trialed for implementation in early 1997. A Learning Assessment Project was established at the elementary level, with all students being tested in literacy, mathematics and science at years 3 and 5. Results were used for school-level planning and report to parents; 'league tables' of results were not introduced, in contrast to practice in Britain. These features were all implemented within a framework of a school charter, a short document that sets out the priorities, programs and special characteristics of each school, being an agreement between the school, its community and the Education Department that will shape its operations for a period of three years.

The objectives and purposes of Schools of the Future are as follows (adapted from Hayward, 1993):

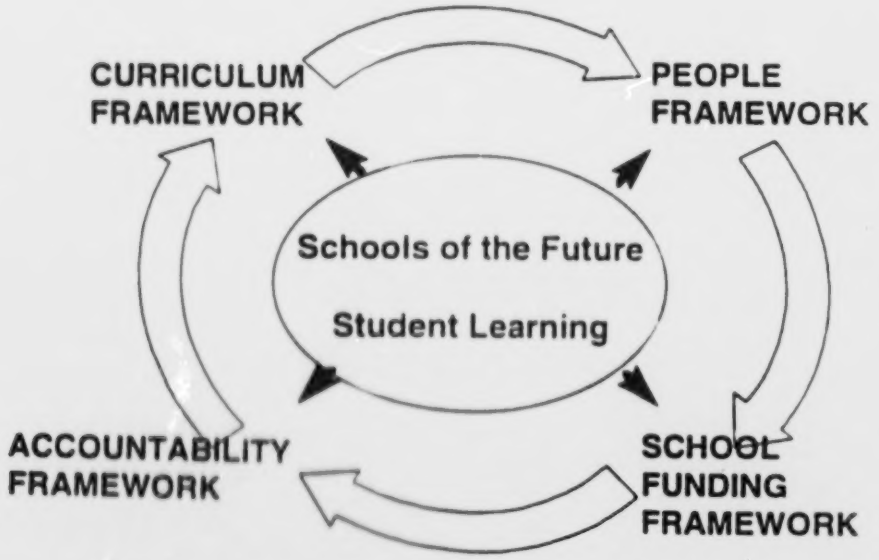
- encourage the continuing improvement in the quality of educational programs and practices in Victorian schools to enhance student learning outcomes;
- actively foster the attributes of good schools in terms of leadership, school ethos, goals, planning and accountability process;
- build on a statewide framework of quality curriculum, programs and practices;

- encourage parents to participate directly in decisions that affect their child's education;
- recognize teachers as true professionals, able to determine their own careers and with the freedom to exercise their professional skills and judgements in the classroom;
- allow principals to become true leaders in their school with the ability to build and lead their teaching teams;
- enable communities, through the school charter, to determine the destiny of the school, its character and ethos;
- within guidelines, enable schools to develop their own programs to meet the individual needs of students; and
- be accountable to the community for the progress of the school and the achievements of its students.

It is evident that a 'purposeful link' is intended between school-based management and learning outcomes for students, as reflected in these objectives and the practices that are illustrated in Figure 1.

Figure 1

The four dimensions of Schools of the Future



Cooperative Research Project

In Victoria, Schools of the Future is the focus of a major investigation known as the Cooperative Research Project, established in early 1993 as a joint endeavor of the Department of Education, Victorian Association of State Secondary Principals, the Victorian Primary Principals Association and the University of Melbourne. Its purpose is to monitor the processes and outcomes of Schools

of the Future as perceived by principals. The project is managed by a Steering Committee of two representatives of each of the four participating organizations. The Steering Committee has been chaired from the outset by Fay Thomas, until recently the principal of a primary (elementary) school.

The project is a five-year longitudinal study with several components, including broadly framed surveys and highly focused investigations, with the former conducted by the Steering Committee, and the latter by graduate research candidates at the University of Melbourne.

Scale of the project

Reported here are the findings from the sixth survey of principals of Schools of the Future. The first three surveys were conducted shortly after schools in the first three intakes completed their charters: intake 1 in late 1993, intake 2 in early 1994, and intake 3 in late 1994. A fourth survey of intake 1, twelve months after introduction, was also conducted in late 1994. A fifth survey was conducted in late 1995 with principals in a representative sample of schools in intakes 1, 2, 3 and 4, after implementation in all but three schools in the state, and after all features of Schools of the Future had been introduced. The sixth survey was completed in late 1996, again in a representative sample of schools, after intake 1 schools had completed three years in the program and were about to undertake their first triennial review.

The findings of the first survey were published as *The Base-Line Survey* (Cooperative Research Project, 1994). The findings of the second survey of principals of intake 1 schools, twelve months after the base-line study, were published as *One Year Later* (Cooperative Research Project 1995a). The findings of the first four surveys were published as *Taking Stock* (Cooperative Research Project 1995b). The fifth report was titled *A Three Year Report Card* (Cooperative Research Project 1996), reflecting its publication three years after the commencement of the project and as the Kennett Government finished its first term. The report of the sixth survey was titled *More Work to be Done . . . But No Turning Back* (Cooperative Research Project 1997), for, as is evident in the findings summarized below, it became clear that principals, by an overwhelming margin, preferred the new arrangements to the old, even though there were issues to be resolved in implementation.

In addition to the foregoing, by the start of 1997, fifteen focused investigations by graduate research students at the University of Melbourne had been completed or were in progress. Topics included the early adoption of school charters, leadership styles of female principals, attitudes of teachers to Schools of the Future, principals' perceptions of their roles, professional development needs of primary principals, leadership among secondary principals, stressors and coping mechanisms among primary principals, strategic leadership by principals, leadership and the management of change, secondary schools as exemplary learning organizations, cost-benefit analysis of principal professional development programs, links between elements of the reform and improved learning outcomes for students, creation of leadership teams, and the Professional Recognition Program.

Links were established with other major research efforts, notably with the work of Allan Odden, Director, Consortium for Policy Research in Education, University of Wisconsin at Madison, who conducted a parallel but independent study of Schools of the (see Odden and Odden 1996). Other research that has had extensive involvement of principals has included the School Global Budget Research Project, a three-year endeavor that provided information to guide recommendations to the Minister of Education on the construction of the school global budget (see Education Committee 1994, 1995, 1996; Caldwell 1996a, Hind 1996).

Scope of the survey

The sixth survey in 1996 included items on confidence in the attainment of objectives of Schools of the Future; sources of information and support for principals; support for involvement in Schools of the Future; role of the principal, including time devoted to the principalship and job satisfaction; benefits experienced thus far; improvements in areas of school charter and various elements in the

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four frameworks of Schools of the Future (as illustrated in Figure 1), namely, Professional Recognition Program, full staffing flexibility / workforce planning, school global budgets, accountability; curriculum and standards frameworks, and teacher professional development planning. These items had all been included in 1995 and, with the exception of those concerned with elements of the framework, had been asked in earlier surveys. Comparisons of responses across all years was thus possible.

In 1996, there were six new questions, namely, whether principals preferred the new arrangements or conditions that prevailed before the introduction of Schools of the Future. The Steering Committee had considered such questions earlier in the reform but determined to wait until all schools were involved and there was a 'critical mass' of schools with at least three years of experience. These conditions were satisfied in 1996.

Sample size and rate of response

A representative sample of 500 schools was drawn from all schools that had joined Schools of the Future, these numbering about 1,700 This was a structured, representative sample reflecting differences among schools according to type, size, geographical location, and year of entry in Schools of the Future.

A total of 339 useable responses was received from the 500 principals surveyed, representing a rate of response of 67.8%, compared to rates in earlier surveys of 69.2% for intake 1 (base-line), 66.2% for intake 1 (one year later), 53.0% for intake 2, 41.4% for intake 3 and 57.0% for the first survey across all intakes (1995). This a noteworthy achievement given that the survey was conducted in Term 4 soon after a further round of school amalgamations was initiated and that the survey was the most complex yet constructed.

Summary of Findings

The findings reported here refer only to principals perceptions on realization of objectives and expected benefits, since these provide the data that are utilized in the structural equation modelling to determine direct and indirect effects on curriculum and learning. A more complete report is contained in another paper presented at this conference (Caldwell, Gurr, Hill and Rowe 1997). The reader is also referred to the full report (Cooperative Research Project 1997) and its counterparts in previous years (Cooperative Research Project 1994, 1995a, 1995b, 1996) for the rich range of findings and analyses, with commentary on differences among the perceptions of principals when classified according to such variables as age; gender; type, size and location of school; and length of experience as a principal.

The most noteworthy findings in 1996 relate to the views of principals about whether they would wish their schools to return to previous arrangements, prior to the implementation of Schools of the Future. They were asked to give five ratings, four related to each of the four elements in the framework for Schools of the Future illustrated in Figure 1, the other an overall rating. The overwhelming majority of principals would not wish their schools to return to pre-Schools of the Future arrangements, being 82% for the curriculum framework, 89% for the resources framework, 77% for the people framework, 77% for the accountability framework, and 86% in an overall sense. Principals who had served as principals under both arrangements were asked to indicate their personal preference. In this instance 70% indicated their preference for being a principal since the implementation of Schools of the Future. These findings are surprising, given powerful concerns about workload, declining levels of job satisfaction, dissatisfaction with a principal performance management scheme, and frustration at 'bureaucratic interference' and inadequate resources.

Principals' perceptions on outcomes

Particular attention is given to principals' perceptions on the outcomes of the reform, especially as they relate to learning, since this is the subject of the paper.

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Confidence in the attainment of objectives

A key component in each survey has been an invitation to respondents to rate their confidence that the objectives and purposes of Schools of the Future will be attained in their schools. These objectives and purposes are those contained in the ministerial statement on Schools of the Future of January 1993 (Hayward 1993). A confidence scale from 1 ('low') to 5 ('high') was provided. The distribution of responses is shown in Table 1, with mean ratings of confidence for each of the surveys conducted to date.

A feature of the ratings is the moderate to high levels of confidence across all items for each of the five surveys, with mean scores in the range 3.0 - 4.3. For the 1996 survey, at least 80% of respondents provided a rating of 3 or higher for five of nine items. The modal rating was 4 for all but one item. While there has been a slight weakening of confidence over the life of the project for all objectives, it is fair to conclude on the basis of the mean, mode and distribution of responses that, overall, principals have sustained a moderate to high level of confidence that the objectives and purposes of Schools of the Future will be attained in their schools.

The two items with the highest mean ratings in 1996 were the same as those in each of the previous surveys, but the order was reversed, with the 'accountability' objective supplanting the 'good schools' objective:

- Schools of the Future are accountable to the community for the progress of the school and the achievements of its students (mean of 3.8 in 1996 compared to 4.1 in base-line survey of 1993 and 3.8 in last annual survey in 1995).

- Schools of the Future actively foster the attributes of good schools in terms of leadership, school ethos, goals, planning and accountability (mean of 3.7 in 1996 compared to 4.3 in base-line survey in 1993 and 3.9 in last annual survey in 1995).

Realization of expected benefits

Principals in the base-line study in 1993 were invited to list the benefits they expected from their schools being Schools of the Future. Twenty-five benefits were classified in four areas -- curriculum and learning, planning and resource allocation, personnel and professional, and school and community -- and included in the survey of intake 1 principals one year later. Essentially, the second survey asked of principals: 'You expected these benefits when you were surveyed in the early stages of Schools of the Future, to what extent have these benefits been realized twelve months later?' As in the second and subsequent surveys, principals were asked to indicate the extent to which these benefits had been realized in their schools. Responses are summarized in

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Table 1

Confidence that objectives and purposes will be attained in schools as perceived by principals in 1996 survey (Cooperative Research Project 1997)

Objective / Purpose	Level of confidence (%) Lo 1	2	3	4	Hi 5	Mean all intakes 1996	Previous surveys[1] 1	2	3	4	5
Schools of the Future...											
• encourage the continuing improvement in the quality of educational programs and practices in Victorian schools to enhance student learning outcomes	3	9	28	**47**	14	3.6	3.6	3.8	3.7	3.7	3.6
• actively foster the attributes of good schools in terms of leadership, school ethos, goals, planning and accountability process	1	8	20	**58**	13	3.7	4.3	4.2	4.1	4.0	3.9
• build on a Statewide framework of quality curriculum, programs and practices	4	14	34	**39**	9	3.4	3.4	3.6	3.4	3.5	3.5
• encourage parents to participate directly in decisions that affect their child's education	6	22	30	**32**	10	3.2	3.5	3.5	3.4	3.4	3.3
• recognize teachers as true professionals, able to determine their own careers and with the freedom to exercise their professional skills and judgements in the classroom	11	22	**30**	28	9	3.0	3.2	3.2	3.2	3.3	3.2
• allow principals to be true leaders in their school with the ability to build and lead their teaching teams	6	16	28	**39**	11	3.3	4.1	3.8	4.0	3.7	3.4
• enable communities, through the school charter, to determine the destiny of the school, its character and ethos	5	14	34	**36**	11	3.3	3.8	3.8	3.7	3.6	3.4
• within guidelines, enable schools to develop their own programs to meet the individual needs of students	6	16	24	**42**	12	3.4	3.9	3.8	3.6	3.8	3.5
• are accountable to the community for the progress of the school and the achievements of its students	2	6	24	**51**	18	3.8	4.1	4.1	4.0	3.9	3.8
OVERALL MEAN						3.4	3.8	3.7	3.7	3.6	3.5

Note: [1] Key to previous surveys: 1 = intake 1 (pilot), 2 = intake 1 (one year later), 3 = intake 2, 4 = intake 3, 5 = all intakes, 1995

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Table 2, with mean ratings for 1995 and for the survey of principals of intake 1 schools one year after implementation. Responses were provided on a 5-point extent of realization scale from 1 ('low') to 5 ('high').

Mean scores in 1996 exceeded 3.0 for 16 of the 25 items. The modal rating was 4 for 11 items, 3 for 12 items, and 2 for 2 items. These were an improvement in the 1995 survey where only 7 items received a modal rating of 4 and all but one lay in the area of planning and resource allocation. There was a substantial improvement in the ratings of 5 of the 7 items in the personnel and professional area, indicating a higher level of coherence is emerging in the elements in the framework of Schools of the Future.

Noteworthy as far as outcomes are concerned are responses for the three items related to curriculum and learning: more responsive and relevant curriculum (mean of 3.2), improved learning outcomes for students (mean of 3.3) and opportunity to innovate (mean of 3.2). For the second of these, improved learning outcomes for students, 85% of principals (up from 82% in 1995) have provided a rating of 3 or more on the 5-point scale. Assuming this is a considered response, it is an important finding that is worthy of closer examination, as is done later in this section in structural equation modelling.

Curriculum and Standards Framework (CSF)

The Curriculum and Standards Framework (CSF) adopted by the Board of Studies is intended to serve a range of purposes such as those listed in Table 3. Principals were invited to rate the extent to which the CSF had improved the school's capacity to achieve these purposes. A 5-point extent of improvement scale was provided, ranging from 1 ('low') to 5 ('high').

The ratings of improvement set out in Table 3 are noteworthy given the often-expressed view that such reforms do not have impact on curriculum or on the learning needs of students. Mean ratings exceed 3 on the 5-point scale in each instance with about three-quarters of respondents giving a rating at least this level. The focus on students is evident in ratings for three items:

The Curriculum and Standards Framework improves school's capacity to:

- move towards a curriculum model based around learning outcomes for students (mean of 3.6)
- establish levels and standards for your students in the eight learning areas (mean of 3.4)
- meet the needs of a range of students (mean of 3.0)

Specifying the links between reform elements and outcomes in curriculum and learning

An important issue is the relationship between the capacities that come with school-based management and outcomes for students. It became abundantly clear in the review of research in the United States that these capacities alone are unlikely to have impact on outcomes (see Hanushek 1996; Smith, Scoll and Link 1996; Summers and Johnson 1996 cited earlier), and that linkages must be established with other initiatives that address student learning. The coherence of the elements in Schools of the Future and the comprehensive nature of the survey instruments in the Cooperative Research Project enabled the research team in Victoria to gain an understanding of these links and confirm their importance.

Table 2
Extent to which expected benefit has been realized in school as perceived by principals in 1996 survey (Cooperative Research Project 1997)

Expected benefit	Level of realization (%) Lo 1	2	3	4	Hi 5	Mean all intakes 1996	Mean all intakes 1995	Mean intake [1] 1994
Curriculum and Learning								
More relevant and responsive curriculum	5	13	**39**	36	6	3.2	3.1	3.1
Improved learning outcomes for students	4	11	38	**43**	4	3.3	3.2	3.1
Opportunity to innovate	8	17	30	**38**	8	3.2	3.2	3.5
Planning and Resource Allocation								
A higher level of self-management	2	11	18	**52**	17	3.7	3.6	3.6
Better resource management	3	8	25	**49**	15	3.6	3.5	3.7
Clearer sense of direction through school charter	3	4	23	**50**	20	3.8	3.9	4.1
Increased accountability and responsibility	1	2	12	**52**	33	4.1	4.1	4.2
Greater financial and administrative flexibility	5	12	24	**41**	18	3.6	3.5	3.7
More resources	19	**32**	27	15	7	2.6	2.5	2.5
Improved long-term planning	6	10	29	**43**	11	3.4	3.5	3.9
Improved school policies	5	9	**40**	38	9	3.4	3.3	3.3
Better administrative support	13	19	**32**	29	7	3.0	2.7	3.0
Personnel and Professional								
Better personnel management	4	11	32	**49**	5	3.4	3.0	3.5
Increased staff job satisfaction	18	**35**	30	15	2	2.5	2.4	2.7
Enhanced professional development	2	4	26	**51**	17	3.8	3.6	3.3
Shared decision-making	3	9	35	**44**	9	3.5	3.2	3.4
Improved staff performance	3	10	**46**	34	7	3.3	3.1	3.2
More effective organisation following restructure	12	24	**40**	20	5	2.8	2.9	3.1
Enhanced capacity to attract staff	24	20	**29**	19	7	2.7	2.4	2.8
School and Community								
More cohesive staff and community	7	16	**49**	25	3	3.0	2.9	3.2
Increased community involvement	10	25	**45**	16	4	2.8	2.8	2.9
Higher community profile	6	14	**38**	35	7	3.2	3.2	3.2
Less bureaucratic interference	26	27	**28**	15	4	2.4	2.6	2.8
Enhanced school identity	3	12	**42**	36	8	3.3	3.2	3.3
Improved cooperation between schools	18	21	**35**	18	7	2.7	2.9	2.8
OVERALL MEAN						**3.2**	**3.1**	**3.3**

[1] Intake 1 principals surveyed one year after base-line survey.

Table 3

Extent of improvement in building a school's capacity through the Curriculum and Standards Framework (Cooperative Research Project 1997)

The Curriculum and Standards Framework improves school's capacity to...	**Extent of improvement (%)** Low 1	2	3	4	High 5	**Mean**
• plan the provision of the curriculum program	6	12	29	**45**	9	3.4
• establishes levels and standards for your students in the eight learning areas	5	12	34	**40**	10	3.4
• focus attention on the Key Learning Areas	3	8	18	**49**	23	3.8
• incorporate initiatives such as early literacy programs, Bright Futures and Physical and Sport Education into the schools curriculum plan	11	15	**34**	33	8	3.1
• move towards a curriculum planning model based around learning outcomes for students	4	8	29	**44**	14	3.6
• report to parents on student achievements	9	14	34	**35**	7	3.2
• meet the needs of range of students	11	16	**41**	27	5	3.0

As summarised in Tables 2 and 3, the distribution of responses indicated a view among the majority of principals that there have been gains in the areas of curriculum, teaching and learning, either in improved outcomes or improved capacities to carry out the work of the school. For example, 85% of principals gave a rating of 3 or more on a 5-point scale of 'low' to 'high' on the extent to which the expected benefit of 'improved learning outcomes' had been realized in their schools.

These are, of course, opinions or perceptions. Analysis on the basis of actual achievement scores could not be conducted for two reasons. First, because these achievements were not systematically monitored at the time Schools of the Future was initiated, hence there were no base-line data on achievement. Second, because the unions placed a ban on teachers furnishing information to researchers in the Cooperative Research Project when an attempt was made to monitor student achievement in intake 1 Schools of the Future and schools that had not yet entered the program. This research was to have been conducted by Peter Hill, Director of the Center for Applied Educational Research at the University of Melbourne, one of the most eminent researchers in the field of school and classroom effectiveness and a prominent contributor to the sponsor of this symposium.

Analysis of direct and indirect effects on perceptions of curriculum and learning benefits. It is possible to undertake analysis of responses in the survey to determine the direct and indirect effects of selected factors on learning. The approach known as structural equation modelling was employed, using LISREL 8 (see Jöreskog and Sörbom 1993). This approach allows the analysis of ordinal-scaled variables such as those utilized in the items of this survey. This analysis was undertaken on the 1995 data (reported in Caldwell 1996b) and on the 1996 data, with the findings for the latter reported here.

The first step was to take clusters of related items in the survey and to treat these as constructs. This stage of the analysis is illustrated in Table 4 for levels of confidence of principals that the objectives and purposes of Schools of the Future will be achieved in their schools. The construct is described as Confidence in *Attainment of Schools of the Future Objectives*. A one factor congeneric measurement model was utilized to examine the relative weight that each item contributes to the construct, as indicated by the proportionally weighted factor score regression coefficients listed in the second column of the table. Each item in Table 4 contributes to the construct, with the total of item weights being 1.000.

Not all items contribute to the construct. For example, there is no item weight assigned to 'allow principals to be true leaders in their school with the ability to build and lead their teaching teams'. In this and similar instances for other constructs, the measurement error variance exceeded the explained variance for the item, hence that item is deemed to have not contributed to the construct.

Noteworthy in Table 4 is that the item 'encourage the continuing improvement in the quality of educational programs and practices in Victorian schools to enhance student learning outcomes' (0.202) followed by 'actively foster the attributes of good schools in terms of leadership, school ethos, goals, planning and accountability process' (0.141) together contributed the most to the construct (total weight of 0.343).. More than 30% of the construct is thus associated with two of nine objectives that are concerned with learning outcomes and the attributes of good schools. This was also the case in the analysis of the 1995 findings, except that the order of the two items is reversed as far as item weights are concerned.

Also noteworthy, in this and the other analyses reported here is the reliability of the construct, in Table 4 being 0.904 ($r_C = 0.904$). This high level of reliability may be broadly interpreted to indicate a 90% probability that another sample of the principal population would have produced the same pattern.

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Table 5 contains item weights for four clusters of variables that make up the constructs of *Curriculum and Learning Benefits* (r_c = 0.846), *Planning and Resource Allocation Benefits*(r_c = 0.869), *Personnel and Professional Benefits* (r_c = 0.889), and *School and Community Benefits* (r_c = 0.895), with high levels of construct stability indicated by reliability coefficients exceeding 0.8 in every instance, even higher than for constructs based on the 1995 ratings, that also exceeded 0.8.

The constructs and the items that contribute to them are derived from the benefits expected of Schools of the Future as perceived by principals in the survey of intake 1 (pilot) schools, and as subsequently surveyed. The constructs so defined are noteworthy in a number of respects.

- The construct labelled *Personnel and Professional Benefits* is the richest in the sense that each item contributes to its construction, with weights varying from 0.097 ('better personnel management') to 0.250 ('enhanced capacity to attract staff').

- The item 'improved learning outcomes for students' dominates the construct of *Curriculum and Learning Benefits* with a factor score regression coefficient (item weight) of 0.557.

- 5 of 9 items contribute to the formation of the construct *Planning and Resource Allocation Benefits*, with those contributing the most being concerned with flexibility through self-management: 'greater financial and administrative flexibility' (0.286) and 'a higher level of self-management' (0.254).

- Among 4 of 6 items contributing to the construct *School and Community Benefits*, the two with highest weight are 'higher community profile (0.296) and 'increased community involvement' (0.280).

Table 6 is derived from responses to items concerned with principals' perceptions of the extent to which the Curriculum and Standards Framework has improved a school's capacity to accomplish various tasks related to curriculum, learning and teaching. The construct has been labelled *Curriculum Improvement due to the Curriculum and Standards Framework*. This construct has the highest stability of any in this analysis (r_c = 0.936). All items contribute, ranging from 0.103 ('meet the needs of a range of students') to 0.285 ('plan the provision of the curriculum program').

Table 7 is derived from responses to items concerned with principals' levels of satisfaction with support for the planning and implementation of the Curriculum and Standards Frameworks. The construct has been labelled *Curriculum and Standards Framework Support*. Its stability is the lowest of the constructs (r_c = 0.786), although this is an acceptably high measure of reliability. The weights range from 0.167 ('KIDMAP, the networked student data system') to 0.350 ('course advice').

Table 4

Factor score regression coefficients indicating item weights contributing to the construct Confidence in *Attainment of Schools of the Future Objectives*

Objective / Purpose	Item weights
Schools of the Future...	
• encourage the continuing improvement in the quality of educational programs and practices in Victorian schools to enhance student learning outcomes	0.202
• actively foster the attributes of good schools in terms of leadership, school ethos, goals, planning and accountability process	0.141
• build on a Statewide framework of quality curriculum, programs and practices	0.124
• encourage parents to participate directly in decisions that affect their child's education	0.093
• recognize teachers as true professionals, able to determine their own careers and with the freedom to exercise their professional skills and judgements in the classroom	0.117
• allow principals to be true leaders in their school with the ability to build and lead their teaching teams	
• enable communities, through the school charter, to determine the destiny of the school, its character and ethos	0.105
• within guidelines, enable schools to develop their own programs to meet the individual needs of students	0.117
• are accountable to the community for the progress of the school and the achievements of its students	0.101
TOTAL	1.000

$r_c = 0.904$

Table 5

Factor score regression coefficients indicating item weights contributing to four constructs related to expected benefits

Constructs related to expected benefits	Item weights
Curriculum and Learning Benefits ($r_c = 0.846$)	
More relevant and responsive curriculum	0.295
Improved learning outcomes for students	0.557
Opportunity to innovate	0.148
Total	1.000
Planning and Resource Allocation Benefits ($r_c = 0.869$)	
A higher level of self-management	0.254
Better resource management	0.241
Clearer sense of direction through school charter	
Increased accountability and responsibility	
Greater financial and administrative flexibility	0.286
More resources	0.131
Improved long-term planning	0.088
Improved school policies	
Better administrative support	
Total	1.000
Personnel and Professional Benefits ($r_c = 0.889$)	
Better personnel management	0.097
Increased staff job satisfaction	0.118
Enhanced professional development	0.192
Shared decision-making	0.125
Improved staff performance	0.218
More effective organisation following restructure	0.250
Enhanced capacity to attract staff	
Total	1.000
School and Community Benefits ($r_c = 0.894$)	
More cohesive staff and community	0.259
Increased community involvement	0.280
Higher community profile	0.296
Less bureaucratic interference	
Enhanced school identity	0.165
Improved cooperation between schools	
Total	1.000

Table 6

Factor score regression coefficients indicating item weights contributing to the construct *Curriculum Improvement due to Curriculum and Standards Framework*

The Curriculum and Standards Framework improves school's capacity to...	**Item weights**
• plan the provision of the curriculum program	0.281
• establish levels and standards for your students in the eight learning areas	0.235
• focus attention on the eight Key Learning Areas	0.125
• incorporate initiatives such as early literacy programs, programs for gifted students, and Physical and Sport Education into the school's curriculum	
• move towards a curriculum planning model based around learning outcomes for students	0.151
• report to parents on student achievements	0.105
• meet the needs of a range of students	0.103
TOTAL	1.000

$r_c = 0.936$

Table 7

Factor score regression coefficients indicating item weights contributing to the construct *Curriculum and Standards Framework Curriculum Support*

Mechanism for support of Curriculum and Standards Framework	**Item weights**
• KIDMAP (networked student data system)	0.167
• course advice	0.350
• teacher networks	0.250
• Learning Assessment Project (primary schools only)	0.233
TOTAL	1.000

$r_c = 0.786$

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Modelling the effects on curriculum and learning. Further analysis was conducted to determine the 'goodness of fit' between the data and a model formed by the constructs described in the preceding pages. These constructs contain most of the elements of the Schools of the Future program. Explanations for why reforms such as Schools of the Future should impact on student learning invariably refer to these elements; for example, through an enhanced capacity to attract staff (*Personnel and Professional Benefits*) and greater financial and administrative flexibility (*Planning and Resource Allocation Benefits*).

Figure 2 contains the explanatory regression model that shows the interdependent effects among variables (in this instance, latent variables that represent the constructs) on the variable *Curriculum and Learning Benefits*. Standardized path coefficients are shown, representing the direct effects (all paths are statistically significant beyond the $p < 0.05$ level by univariate two-tailed test). The fit between data and model is very good indeed, with an Adjusted Goodness of Fit Index of 0.947, indicating that almost all of the variances and co-variances in the data are accounted for by the model.

The path coefficients may be interpreted in this manner. The direct effect of *School and Community Benefits* on *Personnel and Professional Benefits* is indicated by a path coefficient of 0.479. This indicates that an increase in the measure of *School and Community Benefits* of 1 standard deviation produces an increase in the measure of *Curriculum and Learning Benefits* of 0.479 of a standard deviation.

The factors having direct effects on the *Curriculum and Learning Benefits* are *Curriculum improvement due to Curriculum and Standards Framework* (0.332), *Personnel and Professional Benefits* (0.464) and confidence of principals in *Attainment of Schools of the Future Benefits* (0.227). The remaining three factors have indirect effects on *Curriculum and Learning Benefits*, being mediated through other factors. The indirect effects of *School and Community Benefits* are mediated through *Attainment of Schools of the Future Objectives* and *Personnel and Professional Benefits*. The indirect effect of *Planning and Resource Allocation Benefits* is mediated through *Personnel and Professional Benefits*. The indirect effect of *Curriculum Support through the Curriculum and Standards Framework* is mediated through *Curriculum improvement due to the Curriculum and Standards Framework*. The direct, indirect and total effects are summarized in Table 8.

Discussion. The explanatory model derived from findings in the 1996 survey is similar to that derived one year earlier indicating a high degree of stability in the explanatory model. A noteworthy difference is the stronger effects of the three constructs that impact directly on *Curriculum and Learning Benefits*: *Personnel and Professional Benefits* (0.464 in 1996 compared to 0.217 in 1995), *Curriculum Improvement due to the CSF* (0.332 in 1996 compared to 0.271 in 1995) and confidence in the *Attainment of SOF Objectives* (0.227 in 1996 compared to 0.195 in 1995). Also noteworthy is the low correlation between individual and school characteristics of respondents and the various dimensions of the model. In other words, the explanatory model stands independent of the nature of respondents and their schools.

While these findings are based on the perceptions of principals, the direct, indirect and total effects modelled in Figure 2 and summarized in Table 8 are consistent with expectations for the successful implementation of a scheme of school-based management. The structural features of such reforms such as the shift of authority, responsibility and accountability to the school level are unlikely, by themselves to have either a direct or indirect effect on curriculum and learning unless the capacities that may be nurtured within such arrangements are developed. Clearly, the principals who report curriculum and learning benefits tend to be those who have reported benefits in other domains that have emerged with the Schools of the Future program, including the capacity to select staff, increased flexibility in the use of resources, and involvement of the community.

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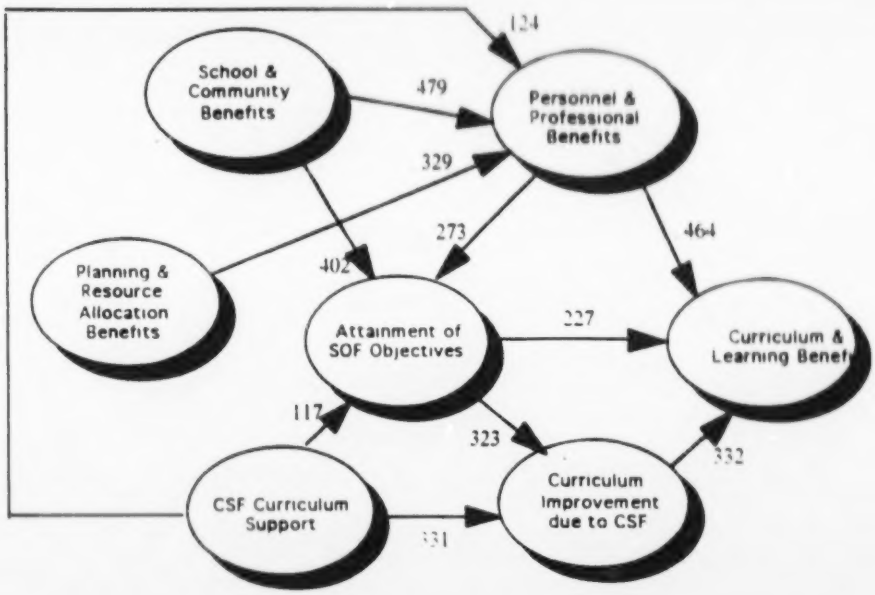
Figure 2

Explanatory regression model showing interdependent effects among factors influencing perceived Curriculum and Learning Benefits showing standardized path coefficients



Model Goodness-of-fit Indices: $\chi^2(6) = 9.293$ ($p = 0.158$)
RMSEA = 0.042
GFI = 0.989, **AGFI** = 0.947
RMR = 0.022
CFI = 0.998, **RFI** = 0.978

The model is consistent with findings of research conducted by Matthew Miles and his colleagues reported exactly one decade ago at the Annual Meeting of the American Educational Research Association (Miles, 1987). Case studies were completed following a nation-wide survey of schools that had shown major gains in the wake of system- and school-initiated improvement projects. Sixteen factors were identified as having a cause-and-effect impact on school improvement. Four were identified as pre-conditions to the extent that a system-wide policy was required to set them in place. These were the appointment of strong educational leaders; a relatively high level of school autonomy, especially in relation to the allocation of resources; appointment of staff to ensure a high level of cohesiveness; and the decentralization of decision-making to the extent that the principal and staff have the opportunity to adapt the program of the school to meet the needs and interests of the local community. The Schools of the Future program, as with approaches to the local management of schools in other places, provides these pre-conditions. The remaining twelve factors were addressed by the principal, staff and others in the school community. These included power sharing or the empowerment of staff, the provision of rewards for staff, vision, the exercise of control over staffing, the exercise of control over the allocation of resources, staff willingness and initiative in the management of change, evolutionary program development, the building of external networks, evidence of 'deep' rather than 'shallow' coping in addressing priorities and problems that arise.

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Table 8

Solution to Path Regression Model for *Curriculum and Learning Benefits:* Standardized Direct, Indirect and Total Effect Estimates *

Path (Effect)	Direct Effect	Indirect Effect	Total Effect
School & Community Benefits on :			
Curriculum & Learning Benefits	-	0.401	0.401
Personnel & Professional Benefits	0.479	-	0.479
Curriculum Improvement due to CSF	-	0.172	0.172
Attainment of SOF Objectives	0.402	0.131	0.533
Planning & Resource Allocation Benefits on :			
Curriculum & Learning Benefits	-	0.183	0.183
Personnel & Professional Benefits	0.329	-	0.329
Curriculum Improvement due to CSF	-	0.029	0.029
Attainment of SOF Objectives	-	0.090	0.090
CSF Curriculum Support on :			
Personnel & Professional Benefits	0.124	-	0.124
Attainment of SOF Objectives	0.117	0.033	0.150
Curriculum & Learning Benefits	-	0.218	0.218
Curriculum Improvement due to CSF	0.331	0.049	0.380
Personnel & Professional Benefits on :			
Curriculum & Learning Benefits	0.464	0.091	0.555
Curriculum Improvement due to CSF	-	0.088	0.088
Attainment of SOF Objectives	0.273	-	0.273
Curriculum Improve due to CSF on :			
Curriculum & Learning Benefits	0.332	-	0.332
Attainment of SOF Objectives on :			
Curriculum & Learning Benefits	0.227	0.107	0.334
Curriculum Improvement due to CSF	0.323	-	0.323

* All effect estimates are statistically significant beyond the $p < 0.05$ level

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good strategies in the implementation of change, and change in organizational structures and processes. All are included or are implied in the factors that constitute the model in Figure 2.

The model makes sense intuitively as well as theoretically. Principals and other school leaders are frequently dismayed at findings that there is an absence of evidence of impact of school-based management on outcomes, especially in Victoria and Britain where school-based management is one element of a coherent package of reforms. Their explanations tend to involve a series of effects or causal links that are consistent with the model. The writer has conducted workshops with school leaders in three nations in recent months (Australia, Hong Kong and the United States) and has invited participants to describe a significant improved outcome for students and to account for that improvement by the mapping of activities. Maps are consistent with the model. It is precisely these connections that have been absent from many schemes of school-based management and that perhaps understandably account for the paucity of evidence of impact. Moreover, there are few instances in the literature, apart from that reported here, that have involved a level of analysis that may reveal models such as those illustrated in Figure 2, with that by Cheung (see Cheung and Cheng 1997) in Hong Kong a notable exception.

The writer's first major research on school effectiveness was conducted in Australia in 1983 as a Project of National Significance. It revealed that effective schools had a deep capacity for planning and resource allocation that focused on curriculum programs and priorities among the learning needs of students. To the extent that schools were empowered at the time, findings were consistent with the model in Figure 2. However, a model furnished by one school in 1983 involved a powerful role for teams of teachers and it became the basis of an extensive training and development program in several countries over a number of years (Caldwell and Spinks 1988), with subsequent refinement and a sharper focus on leadership (Caldwell and Spinks 1992). However, while reforms along the lines of Schools of the Future may be an important if not a necessary pre-condition, they are insufficient for lasting school reform. What more needs to be done is the subject of two forthcoming publications, one from a policy perspective (Caldwell and Hayward 1997), the other from a learning perspective (Caldwell and Spinks 1998)

Conclusion

This paper has reported key findings of a longitudinal study of principals' perceptions of far-reaching change that involved significant decentralization to the school level within centrally-determined frameworks. While analysis is limited by the necessary reliance on perceptions rather than student achievement data, a relatively stable model has been derived through the deeper analysis of ratings that explains direct and indirect effects of elements of Schools of the Future on outcomes in curriculum and learning. In this regard, an important contribution to the literature and current debate on the impact of school-based management has been made. The groundwork has been laid for comprehensive case study research and, now that a curriculum and standards framework has been established and schools have a rich data base on student performance, the opportunity is presented for further research that will draw on measures of student achievement.

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